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China Report

AGRICULTURE

No. 173

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CHINA REPORT

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I. GENERAL INFORMATION

PROGRESS IN NON-STAPLE FOOD PRODUCTION REVIEWED

Beijing GUANGMING RIBAO in Chinese 3 Oct 81 p 1

[Article: "Bolster Scientific Research on Vegetables, Milk, Eggs, Meat and Fruits; Beijing Agricultural Scientists and Technicians Make Contribution to Quickening Construction of Suburban Non-staple Foodstuffs Bases"]

[Text] Following a program of "service to the capital and prosperity for the peasants," Beijing municipal scientists and technicians have intensified scientific research on vegetables, milk, eggs, meat, and fruits to make a contribution to hastening building of a Beijing suburban non-staple food base.

As a result of investigation, research, and wideranging collection of data, capital city agricultural scientists and technicians last year presented "A Preliminary Comprehensive Agricultural Zoning Report for Beijing Municipality," which divided suburban Beijing into five category 1 zones for vegetables, grains, grains and fruits, fruits, and forests, and 17 category 2 zones, and designated the direction of development of each zone, providing scientific data for the readjustment of the structure of agriculture and rational planning of diversified production patterns. In the mountain areas that account for two-thirds of the total area of suburban Beijing, the tendency toward a single grain crop economy has already begun to change, and the emphasis has shifted to development of forests and fruits. The area of Beijing in which Chinese chestnut growing was formerly concentrated is gradually being restored to chestnut production, and some of Beijing's native handicraft production is also gradually reviving and developing.

In view of the needs of markets in the capital city, during the past 2 years Beijing municipal agricultural scientists and technicians and scientists and technicians of relevant units have worked together to bolster scientific research and the spread of scientific and technical knowledge about vegetables, milk, eggs, meat, and fruits. Eight superior hybrid combinations of early, intermediate, and late maturing cabbages are now grown on 99 percent of the 20,000 mu area that comprises the city's cabbage growing area, lengthening the period of cabbage supply in the city's markets. A group of Chinese cabbage hybrid varieties that they have bred is grown on a 40,000 mu area, which is 50 percent of the area devoted to the growing of Chinese cabbage. An annual increased output of between 100 and 200 million jin of these Chinese cabbages is possible. The spread of these two accomplishments can each increase annual peasant earnings by more than 2 million yuan. Taking note of the general year after year virus disease that reduced tomato yields, they bred disease resistant, high yield new varieties "Jiahong," and "Jiafen No 1," which are now in process of being spread.

In order to advance development of the livestock industry, livestock veterinary medicine scientists and technicians successfully separated live virus of malikeshi [7456 4539 0460 3044 4016] disease in chickens and successfully reproduced a weakened virus vaccine to immunize against this chicken disease, the use in production of which played a major role in controlling malikeshi disease in chickens. They experimentally promoted forced artifical molting of chickens and evaluated young chick characteristics on the basis of their feathers to increase annual chicken egg output, reduce production costs, and advance specialization of production. Additionally, they bred a superior quality hybrid hog with a lean meat rate of more that 50 percent, "Duchangbei." In the feeding of hogs and chickens, they promoted used of mixed feeds, which conserved feed, and increased the slaughter rate for hogs and the egg production rate of chickens. In order to improve the situation in cow's milk in which supply could not keep up with demand, the Milk Cow Institute of the State Farm Management Bureau successfully experimented with early weaning of calves and techniques for accelerating cow reproduction.

In order to enrich the supply of fruits in the market, forestry scientists and technicians intensified research on peaches, Chinese chestnuts, strawberries, cherries, the fruit of Chinese hawthorne, watermelons, and grapes, and have now bred a series of early, intermediate, and late ripening peach varieties, the early ripening variety of which reaches market at the end of June each year. The late ripening variety can be held until just before the national anniversary [1 October] for harvesting. The two chestnut varieties, "Yanshan Hongli" and "Yanfeng," which they bred, have been successfully grafted on more than 300,000 plants in suburban Beijing. Research on the greening and beautification of the hilly areas and scenic areas of the capital city's environment is also being pressed.

9432
CSO: 4007/44

NATIONAL

CAUTIONS ISSUED ON OVEREXPANSION OF SUNFLOWER PRODUCTION

Beijing RENMIN RIBAO in Chinese 13 Oct 81 p 3

[Article by Fu Fuqin [0265 4395 0530], Oil Crops Institute, Chinese Academy of Agricultural Sciences: "Several Problems To Be Watched in Expanding Sunflower Production"]

[Text] The economic value of sunflowers is high; the quality of their oil is good, and they are characterized by tolerance of drought, and salinity-alkalinity, which make them an oil-bearing crop suitable for sowing in China's arid, semi-arid, and saline-alkaline northern areas. According to 1980 statistics, the national area sown to sunflowers was 12 million mu, making them one of China's five major oil-bearing crops.

However, several problems have appeared in sunflower output, which should arouse the serious attention of agricultural departments and pertinent research units. These problems are principally the following:

1. Some communes and brigades grow crop after crop on the same soil.

Sunflowers consume a fair amount of fertilizer, and should not be continuously cropped. Longterm continuous cropping can excessively deplete soil fertility, and it can also intensify outbreaks of sunflower diseases and insect pests.

2. In many places today, sunflower diseases are becoming more and more serious, rust, brown patch, black spot, and wilt causing particularly great damage.

3. Sunflowers have numerous empty husks or husks half-filled with seeds for a general loss in output of 15 to 20 percent, or as high as around 40 percent.

4. Sunflower species have become mongrelized and serious degeneration has occurred. Because plant heights on the same plots are not even, they do not ripen at the same time, causing problems both for hand and machine harvesting.

I propose action in the following ways to solve the aforestated problems:

1 In the production of sunflowers, attention must be given the principle of combining soil use and soil nurture, practicing rotational cropping of different crops. The crops grown on each plot should be rotated once every three years. Crops of the grass family and pulses (including pulses grown as green manure) are an ideal crop

to be grown just ahead of sunflowers. In addition, intercropping, and interplanting is a pretty good way of avoiding multiple cropping of the same crop.

2. Intensification of research and methods of prevention and control of sunflower diseases and insect pests. Units currently engaged in sunflower research and plant protection research forces are weak. Meanwhile sunflower diseases and insect pests are presently a production problem in urgent need of solution. Forces must be organized for all out research on measures for resistance to, prevention, control and avoidance of sunflower diseases and insect pests.

3. Improvement of farming methods and intensification of field care. Fertilization must be done sensibly, proper amounts of nitrogenous fertilizer must be applied, and attention must be given fertilization with phosphate and potash fertilizer. In order to improve the fruiting rate, in addition to artificial means of aiding pollination, beekeeping should be promoted in large sunflower growing areas. One hive of bees for every 5 mu can solve the problem of aiding pollination over wide areas.

4. Adaptation of general methods to specific situations in a sensible juxtaposition of other oil-bearing crops. Oil-bearing crops should be grown in a sensible cropping pattern. Concentration on a single specie may diminish capacity to withstand natural diseasters. In addition to expanding sunflowers to arid, semiarid, and saline-alkaline land, the edible oil crop, safflower, may also be planted. Safflowers are a crop that finds use both for edible oil and in pharmaceuticals. Their economic value is high; their adaptability is wide; and their drain on soil fertility is less than from sunflowers. The linoleic acid content of safflowers is also greater than that of sunflowers. The growing of a suitable amount of safflowers together with sunflowers will permit not only fairly high economic benefits, but will also make possible steady continued expansion of sunflowers.

9432
CSO: 4007/45

METALIGNITOUS COAL USED TO PRODUCE FERTILIZER

Beijing GUANGMING RIBAO in Chinese 18 Sep 81 p 1

[Article by Liu Bingqi [0491 3521 3823]: "Use of Metalignitous Coal as a Raw Material For Production of Chemical Fertilizer; Chemical Fertilizer Industry Institute of Ministry of Chemical Industry Wins Major Breakthrough After More Than 3 Years of Concerted Effort"]

[Text] Can metalignitous coal be used as a raw material for the production of chemical fertilizer? After more than 3 years of concerted effort, the Chemical Fertilizer Industry Institute of the Ministry of Chemical Industry finally has won a major breakthrough.

They scrapped the traditional producer gas cycling system and used a new firing chamber method of operation, and they built a metalignitous "one step method" intermediate experimental installation that manufactures synthetic ammonia as a raw material gas. Results of experiments have shown that use of this new technological flow process represents somewhat of an improvement in existing small nitrogenous fertilizer equipment in that it can use metalignitous coal as a raw material for the direct manufacture of synthetic ammonia as a raw material gas in the same way that anthracite coal can be used.

Most of the thousands of nitrogenous fertilizer plants throughout the country formerly used anthracite coal as a raw material. However, numerous provinces and regions have no anthracite coal to use as a raw material. The high cost of output of small nitrogenous fertilizer plants resulting from the need to haul coal by train became a common phenomenon. In early August, The Shaanxi Provincial Science Commission conducted a technical appraisal and evaluation of the "one step method" technological flow process successfully researched by the Chemical Fertilizer Industry Institute, and experts concerned from everywhere in the country were of the opinion that it would play a major role in promotion of the chemical fertilizer industry in places lacking anthracite coal, and in the gasification of cities and towns.

Use of the "one step method" of coal gas gasification can more than double thermal energy utilization, and it eliminates smoke and dust pollution as well. Specifically, use of this new technique for manufacturing gas does not need addition of pressure, does not require manufacture of oxygen, does not require huge investment for construction of new plants, and can make full use of the thousands of small nitrogenous fertilizer plants throughout the country. It also opens broader vistas for the gasification of cities and towns.

9432
CSO: 4007/44

IMMUNIZATION OF PIGS WITH *BRUCELLA SUIS* VACCINE

Tianjin XUMU SHOUYI XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA] in Chinese
No 3, 1981 pp 175-180

[Article by XIE Xin [6200 2500] and LIANG Xihao [2733 1585 3185], both of the Control Institute of Veterinary Bioproducts and Pharmaceuticals, Ministry of Agriculture, Beijing; WEI Xin [5898 1823; deceased], TAO Zhiqi [7118 1807 3825] and TANG Cuiying [0781 5050 5391], all of the Veterinary Research Institute, Guangxi Province: "Immunization of Sheep, Goats, Cattle and Pigs with *Brucella suis* Strain 2 Vaccine. III. Tests on Pigs"]

[Summary] *Brucella suis* strain 2 is capable of inducing immunity in swine against experimental infection. In three experiments 20 boars were immunized subcutaneously with about 20 x 10^9 organisms of *Brucella suis* strain 2 (5 of them received a booster dose 73 days later), 10 were vaccinated with 20 x 10^9 organisms of strains 19 and 20 served as controls. Sixty to seventy days later all animals were challenged subcutaneously with about 10^9 organisms of a virulent strain of *Br. suis* biotype 3 and 45 days after challenge they were killed. Cultural and biological examinations (inoculation of guinea pigs) were made of lymph nodes and visceral organs. Brucella infection was demonstrated in 11 of the 20 animals given strain 2, compared with 18 of the 20 controls. The infection index (number of organs infected/number of organs cultured x 100) of the vaccinated animals was 7.1 percent only, whereas that of the controls was 50 percent. It is obvious that the vaccinated animals cleared their tissue of cultivable brucella much more quickly than did the controls. In the strain 19 group, all 10 of the vaccinated animals yielded brucella and had an infection index of 58 percent, indicating that strain 19 did not confer protection in boars against brucella infection.

The potency of *Br. suis* strain 2 vaccine had been tested on sows in three experiments. In the first experiment 20 sows were vaccinated subcutaneously with 17 x 10^9 organisms of strain 2 and 17 were controls. After vaccination they were mated with experimentally infected boars which excreted brucella in their semen. Within five months after service, only seven of those vaccinated became pregnant and three of them aborted afterwards. In the 17 controls, 5 became pregnant and 3 aborted. No great difference was observed between the vaccinated and controls. Serving the experimental sows with brucella-excreting boars obviously reduced the conception rate of the animals and caused abortion whether the served sows were immunized or not. In the second experiment 10 sows were inoculated with double doses of strain 2 vaccine containing about 20 x 10^9 organisms each at an interval of 30 days. Ten other sows served as controls. One month after vaccination they were mated, this time with brucellosis-free boars. When the majority of the sows were about two to three months pregnant, they were challenged subcutaneously with 5.8×10^4 organisms of a virulent strain of *Br. suis* biotype 3. All animals were killed after abortion or normal parturition and all aborted fetuses, newborn piglets, placentas, vaginal secretions, milk, lymph nodes and organs were studied bacteriologically. None of the 10 vaccinated animals aborted, but one became infected. Of the 10 controls, 7 showed serious infection. The third experiment was performed on the same line as the second with variations in the doses of the vaccine (the initial doses contained 50×10^9 organisms, the booster dose, 42×10^9 organisms) and the challenging dose (14.5×10^4 organisms). None of the 10 vaccinated animals aborted, but 2 became infected. Of the eight controls, none aborted but seven yielded brucella in placentas, vaginal secretions and/or milk. It was concluded that *Br. suis* strain 2 vaccine conferred considerable immunity against subcutaneous challenge in sows, but not against intra-uterine infection.

9717
CSO: 4009/69

BRIEFS

SHANDONG, LIAONING COTTON PROCUREMENT--Beijing, 27 Oct (XINHUA)--Shandong Province, one of China's leading cotton producers, purchased 270,000 tons of ginned cotton by 23 October, overfulfilling the annual purchasing quota by 2 percent, or 22.8 percent more than the same 1980 period, according to the provincial supply and marketing cooperative. The province is still purchasing 10,000 tons of ginned cotton daily, the cooperative said. Last year, provincial ginned cotton output was 535,000 tons. Liaoning Province in the northeast reported a jinned cotton output of 22,500 tons this year, a 5.4 percent increase over last year. By 15 October, the province had purchased 11,050 tons of ginned cotton, 54 percent more than the same 1980 period. [Text] [Beijing XINHUA in English 0807 GMT 27 Oct 81 OW]

FARM SIDELINE PRODUCTS--Beijing, 30 Oct (XINHUA)--During the first 3 quarters of this year, peasants in China have sold 5.9 billion yuan more farm and sideline products to the state as compared with the same period last year. [Beijing XINHUA Domestic Service in Chinese 1138 GMT 30 Oct 81 OW]

CSO: 4007/64

BRIEFS

TIANCHANG COUNTY CROPS--Tianchang County, Anhui, reports a total grain output of more than 700 million jin this year, a 20 percent increase over that of last year. The county's total cotton output of 65,000 dan this year is double that of the last year. Its total output of oil-bearing crops this year is 2.5 times that of the last year. [OW020935 Hefei Anhui Provincial Service in Mandarin 1100 GMT 1 Nov 81]

CSO: 4007/64

OVERFULFILLMENT OF GRAIN QUOTAS ATTRIBUTED TO PEASANTS WHO ARE MOTIVATED

Fuzhou FUJIAN RIBAO in Chinese 2 Oct 81 p 1

[Article from Purchase and Sales Section, Provincial Grain Department: "Entire Province Overfulfills Early Crop Grain Requisition Procurement Quotas. The Four Prefectures and One Municipality of Jianyang, Longqi, Putian, and Xiamen as Well as 44 Counties and Municipalities Overfulfill Quotas; More Than 50 Commune Member Households Single Crop Sales of Grain Amount to 10,000 Jin"]

[Text] The entire province has overfulfilled early grain crop requisition procurement quotas. As of 25 September, 100.66 percent of the province's spring and summer grain requisition procurement was in warehouses in overfulfillment of plan. Jianyang, Longqi, Putian, and Xiamen, as well as 44 counties and municipalities, overfulfilled quotas. Ningde Prefecture and Fuzhou Municipality have fulfilled and put into storage their requisition procurement quotas of double crop early rice. Though Fujian Province's early rice crop was stricken this year with a May cold wave unprecedented in 100 years, as well as with neck blast of rice, which reduced total output from last year, thanks to the all around promotion in the province last winter and this spring of various forms of a system of responsibility for agricultural production, the putting into effect of a policy of requisition procurement grain quotas being guaranteed free from change for a period of 5 years, and the signing of requisition procurement grain contracts, the enthusiasm of the peasants for producing grain and for turning over excess grain to the state was greatly aroused. Jianyang Prefecture's early crop requisition procurement quota of 396 million jin was fulfilled 13 days early than last year, after which another more than 100 million jin continued to be sent to storage. After the commodity grain bases of Pucheng, Jianyang, Jianou, Shaowu, Chongan, Longhai, Zhangpu, Nanjing, Changtai, Pinghe, Ninghua, and Jianning had fulfilled their quotas, they sold an additional more than 126 million jin of excess grain to the state. More than 50 peasant households in the province sold grain from a single crop amounting to 10,000 jin.

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CSO: 4007/47

UNPRECEDENTEDLY HIGH INTERMEDIATE MATURING LATE RICE YIELDS REPORTED

Fuzhou FUJIAN RIBAO in Chinese 30 Sep 81 p 1

[Article by Wang Zhicheng [3769 1807 4453], Zheng Deping [6774 1[illegible]95 1627], and Lin Zhangtang [2651 4545 2768]: "Good News Reported On Fujian Province's Intermediate Maturing Late Rice Crop. Yields Between 30 and More Than Jin Per Mu More Than Last Year from the More Than 200,000 Mu Already Harvested"]

[Text] This year's 3.7 million mu of single crop intermediate maturing late rice is continuing to be harvested throughout Fujian Province. All prefectures report that outputs increase as harvesting continues. It is estimated that this year will mark an all-time record harvest of intermediate maturing late rice.

Most of Fujian Province's single crop intermediate maturing late rice is grown in the mountain regions of northern, western, eastern, and southern Fujian where yields used to amount to only between 300 and 400, or 400 and 500 jin per mu. This year marked a breakthrough in this state of affairs. Ever since harvesting began, good news of a bumper harvest proliferated as batches of high yield fields and bumper yield tracts appeared. In Ningde Prefecture, where harvesting began fairly early and where more than 90,000 mu have already been harvested, yields have averaged 527 jin per mu, an increase of 34 jin per mu over last year from the same area. Luoyuan County planted somewhat more than 52,000 mu of single crop intermediate maturing late rice this year, of which more than one-half has already been harvested, for yields averaging [illegible]eases of 115 jin per mu. Zhongfang Commune in this same county has already completed the harvesting of the somewhat more than 13,000 mu of intermediate maturing late rice it planted for yield increases averaging 131 jin per mu and a 40 percent increase in total output. A 26 percent yield increase is predicted for the entire county. Putian Prefecture has harvested somewhat more than 32,000 mu for yields of 628 jin per mu, yield increases of 40 jin per mu. This year Yongtai County planted somewhat more than 92,000 mu of single crop intermediate maturing rice, of which somewhat more than 25,000 mu has been harvested for yields of 700 jin per mu, which is a 10 percent increase over last year. Jinjiang Prefecture has harvested 5,000 mu with yield increases of 50 jin per mu. Jianyang and Longyan Prefectures, which planted the most single crop intermediate maturing late rice have harvested between 10,000 and 20,000 mu for yields that have increased by 20 to 30 jin per mu over last year. In Sanming Prefecture, this year's rice crop also grew very well. From the somewhat more than 10,000 mu of it harvested, yields are higher than last year. According to statistics as of 25 September, more than 200,000 mu of intermediate maturing late rice has been harvested throughout the province for yields averaging 512 jin per mu, a between 30 and 40 jin increase over last year for the same area.

The main reason for the bumper harvest of single crop intermediate maturing late rice this year has been the arousal of enthusiasm for production of commune members in the wake of implementation everywhere of a system of responsibility for production. Peasants in communes and brigades in mountain regions, in particular, have acted on the basis of existing realities, have adapted general methods to local situations in the readjustment of grain crop patterns, have changed to single crop rice growing in those fields not suited to the growing of double crops of rice, increasing by more than 140,000 mu the single crop intermediate maturing late rice crop growing area in the province. Additionally, there has been a general spread of superior varieties, hybrid rice accounting for more than 70 percent of the total acreage. This, plus the serious attention given science and technology, the intensification of water and fertilizer management, and prevention and control of diseases and insect pests has promoted growth of rice seedlings and assured increased yields.

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CSO: 4007/47

FUJIAN

BRIEFS

NANAN COUNTY WINTER SOWING--Nanan County, Fujian Province, is making preparations for winter sowing. This year it will grow some 30,000 mu of rape, more than double the acreage of last year. More than 30,000 dan of wheat seeds have been made available, and some 10 million dan of farmyard manure have been prepared. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 31 Oct 81 OW]

FUNDING COUNTY ECONOMIC DIVERSIFICATION--Fuding County, Fujian Province, has done well in diversifying its economy by developing various kinds of sideline production. This year the amount of tea procurement exceeds 40,000 dan, showing a 10 percent rise compared with last year's record. The number of long-hair rabbits has increased from last year's 600,000 head to this year's 800,000. From last January to September, the county purchased some 65,000 jin of rabbit hair from commune members. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 31 Oct 81 OW]

SANMING PREFECTURE DIVERSIFIED ECONOMY--Sanming prefecture in Fujian Province has scored gratifying results in developing a diversified economy. Compared with last year, the output of tobacco, rapeseed, peanuts, tangerines, water melon, mushrooms and other crops this year has increased by 30 to 60 percent. The output of soybean is expected to reach 20 million jin this year and the number of hogs in the prefecture exceeds 710,000. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 30 Oct 81 OW]

ROSIN OUTPUT--This year a tremendous increase has taken place over the same period last year in pine resin purchases and rosin production in Fujian Province. Statistics as of 31 August show purchase of more than 47,600 tons of pine resin throughout the province, an increase of more than 7,500 tons over the same period last year, and an 18 percent increase. Output of rosin was more than 39,100 tons, a more than 9,500 ton increase over the same period last year, and in increase of 32 percent. This year, all echelons of government in the province strengthened leadership in rosin production, and diligently put into effect a system of responsibility and procurement policies for pine resin production, which aroused the initiative of the broad masses of pine resin farmers. The Zhangping and Huaan pine resin plants have fulfilled plan for the entire year 3 months ahead of schedule. The pine resin plants at Wuping, Yongding, Shanghang, Liancheng, Chanding, Longyan, Yongan, Datian, Qingliu, Dehua, and Yongtai expect to fulfill the entire year's plan by the end of September. Substantial increase has also taken place in output of pine resin this year in Ninghua, Jianou, and Shaowu counties. [Text] [Fuzhou FUJIAN RIBAO in Chinese 30 Sep 81 p 1] 9432

RAPESEED PROCUREMENT--In order to make full use of the province's advantages in rape production, and to arouse the masses to plant rape and sell rapeseed to the state, the Provincial People's Government recently issued a notice readjusting award purchase standards for procurement of rapeseeds, effective 1 October. The notice stipulated that whatever the quota (i.e. the uniform procurement base figure), for standard or sub-standard rapeseeds the following will apply. For each 100 jin of rapeseeds meeting standards procured by the state, award sales of 100 jin of unprocessed food grains and 20 jin of chemical fertilizer would be offered. This would be an increase of 50 jin of unprocessed food grain over prevailing award sales methods. Award sales for sub-standard rapeseed oil would be decided on the basis of quality. [Text] [Article by Huang Ting [7806 2185], Provincial Agricultural Commission] [Fuzhou FUJIAN RIBAO in Chinese 30 Sep 81 p 1] 9432

CSO: 4007/47

GUANGDONG

INCREASED IMPORTANCE OF SIDELINE PRODUCTION CITED

Guangzhou NANFANG RIBAO in Chinese 30 Sep 81 p 1

[Article: Guangdong Province's Economic Structure Gradually Becoming Rational; Readjustment and Implementation of Special Policies and Flexible Measures Used in Combination"]

[Excerpts] Agricultural Byproducts Production Develops; Commune Members Earnings from Sideline Occupations Increase

A change has also taken place in the structure of agriculture. While maintaining steady increases in grain output, the ratio of sideline occupation production is constantly on the rise. Output value of sideline occupation as a proportion of the total output value of agriculture was 12.98 percent in 1979; climbed to 13.69 percent in 1980; and is forecast this year at about 15 percent. This shows a steady increase in the ratio of earnings from sideline occupations in agricultural earnings. A survey of 580 commune member households done in 1908 shows per capita earnings from sideline occupations as a ratio of total earnings to have been 27.05 percent in 1979, climbing to 28.24 percent last year, and forecast for continued increase this year.

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CSO: 4007/44

HEBEI

FURTHER SPREAD OF SYSTEM OF RESPONSIBILITY FOR WHEAT GROWING REPORTED

Shijiazhuang HEBEI RIBAO in Chinese 28 Aug 81 p 1

[Article: "Shijiazhuang Prefecture Actively Spreads System of Responsibility Linked to Wheat Output; Eliminates Leftist Influence; Diligently Summarizes Experiences; Earnestly Strengthens Leadership"]

[Text] Shijiazhuang Prefecture has gained fairly apparent results from its diligent summarization of experiences, emancipation of the mentality, and active promotion of a system of responsibility linked to output of wheat. At the present time, more than 17,200 production teams throughout the prefecture, or 59 percent of production teams in the prefecture engaged in wheat farming, are putting into effect a system of responsibility whereby calculation of rewards is linked to output.

Around wheat planting time last fall, the number of production teams in which a system of responsibility linking calculation of remuneration to output had been put into effect numberd 13,211 or 47 percent of all teams. Because leftist influence had not been eradicated and the problem of ideological understanding not well solved, and since many of the systems of responsibility linked to output had not been adopted until after the wheat was planted, some methods were not perfected, and practical guidance could not keep pace, so that by the time of the wheat harvest, only 4,320 production teams remained in the system. In order to summarize the lessons of experience, the principal leadership comrades in the Prefecture CCP Committee and in government administrative offices personally took in hand six representative examples. In each county, the head and his assistants, the secretary in charge of agriculture, and the rural village work department chief took in hand 163 representative examples. At the end of June and in early July, another prefecture meeting was held for the exchange of experiences with the system of responsibility linking calculation of remuneration to wheat output. Comrades attending the meeting factually criticized leftist errors, further emancipated mentality, and unified understanding. Experience has made everyone realize thta institution of a system of responsibility linking calculation of remuneration to output is a major policy for the promotion of tremendous increases in wheat output. This year, the system of responsibility linking calculation of remuneration to wheat output took two main forms as follows: One was unified adminstration in a linking of output to labor. Most systems were of this kind. The other kind was unified administration with contracting for work with individual households or with individual households. No matter the form, all resulted in remarkable increases in output. The Prefecture CCP Committee concerned itself directly with five sites where wheat yields per mu increased by more than 50 percent over last year to reach all-time highs. Counties concerned themselves with 163 sites, most of which showed a 40 to 50, or 50 to 60 percent growth over last year. In the wake of the implementation of rewards linked to output, high wheat output teams made new breakthroughs in their output. After low output teams implemented the system, increases in output increased greatly. Those teams that put into effect the linking of remuneration to output for 2 years in a row, showed advances in both years. Those who put the system into effect before planting their wheat also realized striking increases in output as compared with those who instituted the system after planting their wheat. The main reason that implementation of a system of responsibility linking calculation of remuneration to output was able to greatly increase output was the full tapping of potential for increased output of each production link. First, it increased the quality of manure collections, solving the problem of many years standing in the "loess moving away." Second, the fields were leveled carefully. Ridges left in the soil by maching plowing, and the areas all around the edges of the fields, were spaded deeply smoothed, and planted closely. Third a problem of many years standing of a lack of seedlings and not getting a full stand of seedlings was solved to get a full stand of seedlings. Forth was that weeding and hoeing was done conscientiously. Fifth, watering was done on time and evenly. Sicth, fertilizing was done scientifically, spread carefully, and worked into the soil well so that it would not be washed away. Seventh was arousal of enthusiasm for investment of each person. The masses became exceedingly concerned about the purchase, protection, and use of machines. During the first half of the year, the prefecture purchased an additonal 36,000 farm machines of one kind or another, an all-time high. Machines purchased by a combination of commune households or by individual households alone numbered more than 13,000, an unprecedented development. Machinery on order from farm machinery departments by the collective or commune members now number 16,000 nearly half the quantity sold during the previous seven months.

As a result of the summarization of practical experiences, the broad masses of cadres and people generally realized that the linking of remuneration to wheat output was better than having no linkage, that early linking was better than late linking, and that a system fixed for several years at a time was better than changing the system from one year to another. They realized that a system of full rewards and full penalties was better tha proportional rewards and penalties, and that household harvesting and threshing was preferable to estimating output in the fields or collective harvesting and threshing. At the same time, the notion that wheatfield care procudures were simple, that not much care was required, and that there was no need for a system of responsibility was pretty well generally demolished. Also demolished was the notion that wheat outputs were not low, that there was not much potential for increasing output, and so no action was necessary. Other ideas demolished were that following the linking of output to workforce, work units would change from large to small, and that farm machines would not be easily used, so there was no desire to the system, and that threshing would pose great difficulties if done on an individual household basis, and such conventional ideas. In order to further emancipate mentality, the Prefecture CCP Committee courageously and freely spread the system of responsibility linking calculation of remuneration to wheat output so that next year's wheat production will make new breakthroughs.

On the basis of a unified understanding, each echelon strengthened leadership and did a solid job of spreading the system of responsibility linking calculation of remuneration to wheat output. Heads and assistants at all echelons of the party and government personally showed concern, and leadership cadres in counties and communes put emphasis on 793 sites, using the experiences of selected units to promote work in entire areas. At the same time, each echelon trained mainstay cadres, counties and communes training a total of more than 200,000 people. Throughout the prefecture 5,086 cadres not engaged in production were transferred, 1,115 of whom were cadres above the level of commune secretary or bureau chief. These were sent to production teams to provide concrete help. Production teams and production brigades also convened commune member conferences, which carried forward democracy in full discussion. As a result of this work, 26,658 of the 29,180 wheat planting teams in the prefecture have made up their minds to set up a system of responsibility linked to output. This amounts to 91.4 percent of the production teams. Of the total, 17,204 production teams, or 59 percent of the total have paired people to fields in the implementation of contracts with workers or households, and in all the production teams in which a system of responsibility linked to output has been set up, work preparatory to wheat sowing is being done better than in former years.

9432
CSO: 4007/40

HEILONGJIANG

STATE FARMS MAKE EFFORT TO SAVE WHEAT CROP

Beijing RENMIN RIBAO in Chinese 11 Oct 81 p 2

[Article by Correspondent Liu Ruiwu [0491 3843 2976]: "Staff and Workers of Heilongjiang State Farms Spare No Effort in Fight Against Disaster to Harvest Grain"]

[Text] Between mid-June and late August, some prefectures in Heilongjiang Prefecture had continuous overcast and rainy weather. Rainfall averaged from 500 to 600 millimeters, and torrential rains caused rivers to overflow their banks, washing away bridges and culverts, dams, and drainage and irrigation ditches. Large numbers of fields were inundated. An area of 24 million mu of the province's 32 million mu of cultivated land on state farms, or 75 percent of the total cultivated land area, stricken with disaster. Specifically, 12 million of the 16 million mu of wheat, which was about to be harvested was immersed in water. The Sanjiang Plain, the major grain growing area, was hardest hit. Output from more than one-third of the area was lost. The flood disaster also meant low temperatures and little sunshine for fall crops, causing delay in ripening time. Soybeans formed pods without plump beans inside; cornstalks were stunted and many stalks had no ears. Weeds grew in profusion, and some crops were unable to ripen before the advent of frost. The state farms were stricken with natural disasters of floods, waterlogging, and low temperatures such as have rarely occurred.

Late July to the end of August is the time for harvesting wheat, but the overcast and rainy weather continued without let up. Lowlying areas were like lakes, and uplands were saturated with water. Machines could not go into the fields to harvest, and harvesting by hand was extremely arduous. The broad masses of staff and workers throughout the reclamation area did not just look at the disaster and sigh, but went into action at once, using every available means to fight disaster and save the grain. From the head office to individual farms, all echelons of leadership scrambled to go into the front line of the fight against disaster to save the grain, set production measures, doing all possible to rush harvest the wheat.

Each farm adapted general methods to local situations to institute systems of responsibility for production such as contracting for specific quotas of labor, and piecework wage rates to arouse initiative among staff and workers to fight the disaster and bring in the grain. In order to be able to make use of the effectiveness of mechanization, tractors and combines were fitted with devices to prevent them from sinking into the soil. They wore "wooden shoes," or wide tracks.

Alternatively, several tractors would pull a single harvester to harvest the wheat. In low-lying fields where water had accumulated making use of machines impossible, harvesting was done by hand. On state farms throughout the country, upon hearing the bell ring summoning them to work, staff and workers, dependents, the aged, and young children would at once put on rainwear, take some dry food, and brave the rains to rush harvest the wheat.

The entire reclamation area fielded 240,000 people, and Liberation Army forces stationed in the area also came forward to help, everyone, a sickle in his hand, scooping the wheat from the water. Because the continuous rainy and overcast weather allowed no drying of the harvested wheat, it was taken to every office and every household where it was spread to dry on office tables, kang's, and brick and tile kilns so as to reduce losses as much as possible. Thanks to the efforts of staff and employees throughout the reclamation areas and the assistance of the Liberation Army, by 20 September, all the wheat that could be harvested was harvested, and 2 billion jin of threshed wheat was put in storage.

Now staff and workers throughout the reclamation areas are intensifying field management in an effort to increase earnings and conserve on expenditures, and to open avenues of production in an effort to reduce losses from the disaster.

9432
CSO: 4007/45

FUTURE OF WHEAT PRODUCTION IN HUBEI REVIEWED

Wuhan HUBEI RIBAO in Chinese 21 Sep 81 p 2

[Article by Provincial Academy of Agricultural Sciences: "Stabilize Acreages; Make Appropriate Readjustments; Farm Scientifically; and Center Efforts on Per Unit Yields--A Discussion of Views on the Orientation of Development of Hubei Province's Wheat Production"]

> [Text] Editor's Note: In this article, the Provincial Academy of Agricultural Sciences has expounded on the future orientation of development of Hubei Province's wheat production in which there is both an extremely large amount of potential for increased output to be tapped, and the possibility of stepping up the speed of development. To read it is to receive inspiration and to have one's confidence increased. The time of autumn sowing, which marks the beginning of the agricultural production year, is nearing, and it is hoped that each jurisdiction will consider the suggestions put forward in this article, relate them to their own local realities, and study and put them into effect during this year's autumn sowing. Examples are how to further readjust the crop rotation sequence of various autumn sown crops in a combination of use and nurture of the soil; how to decide the area to be sown to wheat this year; how to put into effect and further perfect the system of responsibility for production; and how to adapt general methods to local situations in the use of various measures for increased outputs. For all these things, well-conceived, overall arrangements must be made, both with the needs of the coming year in mind and with a grounding in the present. Only in this way is it possible to seize the initiative in guiding production, and to mobilize and organize the masses to really improve the autumn sowing of wheat and other crops in order to make a contribution to the winning of a bumper increase in grain output for the whole province next year.

Wheat is one of the major grain crops of Hubei Province. The area sown to wheat throughout the province totals about 16 million mu in most years, but during the past 2 years, this area has been expanded to 19 million mu. Total output amounts to more than 75 percent of output for all summer grain crops, or about 15 percent of total grain output for the entire year. For the past 3 years, wheat has occupied a major position as a proportion of the province's total grain production. Statistics show an increase in ouput of 2.2 billion jin in 1979, with wheat accounting for

650 million jin. In 1979, increase in output amounted to 2.5 billion jin, with wheat accounting for 1.1 billion jin. In 1980, because natural disasters cut the harvest by 6.26 billion jin, wheat accounted for only 340 million jin. This shows wheat output to be fairly stable, and possessing a major role in promoting increases in total grain output for the province.

In order to speed up expansion of grain output in the province, we believe it is necessary to stabilize wheat acreage, make appropriate readjustments, farm scientifically, and center efforts on per unit yields. Moreover, the requirement that per unit yields reach 400 jin within a short period of time is attainable.

First of all, let us take a look at the speed of expansion of wheat production for the entire province. In 1975, yields broke an average 200 jin per mu, taking 26 years to do so. By 1979, after only 4 years, yields rose to an average 301 jin per mu. This shows that with steady increase in the level of scientific farming, increases in wheat yields can be speeded up. On the basis of this analysis, within 5 or 6 years, Hubei Province can look forward to yields of 400 jin per mu. Secondly, in seven of the province's counties and municipalities, wheat yields reached more than 400 jin per mu in 1979. Of these, Xiangfan City's suburbs, with somewhat more than 10,000 mu of wheat, had yields of more than 800 jin per mu. The reality of low yields becoming moderate yields, and moderate yields becoming high yields over a wide area demonstrates a very great potential for increased output of wheat in Hubei Province. Third, the wheat varieties currently being promoted for sowing throughout the province can mostly achieve yields of from 500 to 600 jin per mu, and some can produce even more; however, average yields per unit of area are currently only half that. Furthermore, in Hubei Province the major stage for formation of the organs of wheat, i.e. the jointing and flowering stages, is about 50 days, 10 days more than in the northern winter wheat region. This favors differentiation of the florets and formation of more grains. Therefore, all that is necessary is to fully use this favorable condition in the province, and to satisfy wheat's individual growth and development needs, and chances are very good for the realization of still further increases over present levels in wheat yields

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Expansion in wheat production requires keeping the overall situation in view. Autumn sowing is the beginning of the agricultural production year. Crop patterns at this time not only have a bearing on the summer harvest, but also affect the harvest for the entire year. Hubei Province's ability to increase production during the past several years has depended primarily on increases in per unit yields and an expansion of the acreage. However, looked at in overall terms, expansion of the wheat acreage has inevitably meant a contraction in the area sown to barley, broad beans, and winter-sown green manure. Thus, the proportion of wheat cropping on cottonfields following the cotton harvest increased, causing a decline in cottonfield fertility, directly impairing consistent and high yields of cotton in the following year. Therefore, decisions about the area to be planted to wheat must be arrived at through consideration of the production pattern for the entire year, helping both use and nurture of the soil. It is necessary, as well, to consider its economic benefits to achieve increased output season after season and a bumper harvest for the year as a whole. As to whether or not the wheat growing area of a county, a commune, or a brigade should be expanded or contracted, decision must be based on realities in the local area. In some places where hilly and mountainous soils are fairly infertile, per unit yields not high, and increased planting bringing only thin harvests, appropriate increase in winter sowing of green manure might be done with a cut back in the area sown to wheat, waiting until soil fertility has been improved before again gradually reviving the wheat growing area. In wetland prefectures where intermediate rice predominates, the ridged fields, cold waterlogged fields, and winter-flooded fields, where wheat has not be grown heretofore, may, following improvement, be used for appropriate increase in the wheat growing area. In the mountainous region of western Hubei, the two crop system of wheat and corn intercropping can be expanded. In short, in every prefecture, the main orientation for increased wheat yields must be primarily increases in yields per unit of area. Looked at in terms of the entire province, the wheat growing area should be stabilized at around 18 million mu. In the summer grain production structure, there should be a restoration of some of the broad bean and barley growing area. In the history of wheat production in the province, lack of consistency in per unit yields from year to year, and lack of balance in yields from one area to another has been very pronounced. In 20 of the 30 years since Liberation, total output and per unit yields of wheat for the province have declined over the previous year. Last year average wheat yields per unit of area were lower than the province's average per unit yields of 273 jin. In 48 counties and municipalities, the area was 9.24 million mu, one half the total wheat growing area in the province. In 18 of these counties, per unit yields were less than 200 jin on an area of more than 2.4 million mu. The greatest difference in per unit yields from one prefecture to another was 191 jin. The external environmental condition accounting for this inconsistency and imbalance was infertile soil and a lack of fertilizer, too much rain in the spring and drought during the fall and winter. Consequently, in order to get balanced increases in output of wheat over large areas, it is necessary to continue capital construction of farmland water conservancy, efforts to improve conditions of production centering on soil, fertilizer, and water, improving low yield fields, and expanding high yield fields.

In terms of the eight prefectures in Hubei Province, emphasis should go to Jingzhou and Xiangyang prefectures, because both the wheat growing area and total output from these two prefectures amounts to almost half of that for the entire province. These are the province's major commodity wheat production bases. In Xiangyang Prefecture, climatic conditions are suitable for the growing of wheat and the masses have experience in growing it. In Jingzhou Prefecture, the potential for increased wheat output is great. Therefore, rapid increase in per unit yields of wheat in these two prefectures and increase in total output is not only necessary, but also possible. In addition, this would play a role in guiding and promoting wheat production in other prefectures. For this purpose, plans have to be made for leadership, materials and technology for wheat production in these two prefectures, and there has to be step by step assistance and guidance given to get three-fifths or two-thirds of wheat production for the entire province from these two prefectures.

3

Wheat output is composed of the three factors of number of spikes per unit of area, number of grains per spike, and per thousand weight of grains. Experience has demonstrated that for the same place during the same year, whether yields are high or low will be determined primarily by the number of spikes per mu and the number of grains per spike, grain weight showing no great variation. Changes in yields in the same area during different years are related in most cases to the per thousand weight of grains. Consequently it is said that the number of spikes is the main element in high yields, and the per thousand weight of grains is a major condition for consistent yields. The situation in Hubei Province at the moment is a general lack of an adequate number of spikes in production over wide areas, there being generally only from 120,000 to 180,000, and sometimes less than 100,000. Figuring the harvest of 1 jin for every 500 to 600 spikes in most years, with an increase of between 50,000 and 60,000 spikes per mu, yields could be increased 100 jin. As regards the extent of change in per thousand weight of grains, in Hubei Province there is a difference some years of about 10 grams. On the basis of the foregoing, the crux of increases in wheat yields per unit of area lies first of all in using every available means to increase the number of panicles and the number of grains per panicle, after which the per thousand weight of grains can be stabilized.

In order to achieve these things, it is necessary, first of all, to make sure of growing a full stand of wheat. Second is a need for rational fertilization. Third is the need for work to prevent flooding and to prevent diseases and insect pests. For large area production, lack of a sufficient number of wheat seedlings is the direct reason for an inadequate number of spikes. In most prefectures the number of basic seedlings is only 120,000 to 150,000 per mu, and sometimes less than 100,000. Furthermore, a general situation exists of missing seedlings and cracking of soil around seedlings over between 10 and 20 percent of the area. As a result of fertilizer and water conditions and the careless planting and care of wheat, the tillering and heading rate is not high, usually only 10 to 20 percent, and in some cases each seedling forms only a single spike. Consequently, suitable increase in the number of basic seedlings and reliance on main stems to form spikes are major means for increasing per unit yields. In addition, in most years, Hubei Province has about 3 million seedlings that come up too late and more than 1 million seedlings that grow too early. This has a great influence on increases in per unit yields. Therefore, attention to planting at the right times, and assuring between 150,000 and 220,000 basic seedlings per mu depending on the previous crop planted on the same soil and different levels of soil fertility are the foundation for bumper output. Another point is that for the past 30 years, Hubei Province has had fall and winter drought once every 6 years and fall waterlogging once every 7 years. Efforts to increase the quality of leveling of the land, attention to preservation of moisture, and a fight against drought to protect the seedlings or to prevent waterlogging through draining away of stagnant water, and every effort to reduce or prevent the rotting of roots or seeds are important links in prompt emergence of seedlings and for a full stand of wheat.

In about 60 percent of the wheat growing area of Hubei Province, seeds that will not germinate are planted or not enough fertilizer is applied. During the past several years, the province has promoted widely the application of fertilizer for tillering, for jointing, and spraying of fertilizer on leaves, which have played a very great role in increasing wheat yields. Last year, fertilizer for jointing was applied to more than 13 million mu of wheatfields throughout the province, for an average increase in yields of from 70 to 80 jin per mu. Through this measure alone, wheat output for the province was increased by from 900 million to 1.1 billion jin. Therefore, if bumper increases in wheat harvests are to be realized, in addition to applying sufficient base fertilizer, continuation of attention to these three applications of fertilizer will be very necessary.

In most prefectures of Hubei Province, quantity of rainfall during the wheat growing season most years is more than 500 millimeters, half of it being concentrated during April and May. This is greatly in excess of wheat's physiological needs. The excessive amount of soil moisture leads to rotting damage, and when there is rotting, dieases and insect pests proliferate, plants deteriorate early, or lodge, or burst and die in a quite common situation. In places along rivers and lakeshores, in particular, failure to separate drainage and irrigation facilities means that when dry spells and wet spells follow each other, quite naturally flooded areas may surround drought stricken ones. If such places are to get consistently high yields, they will have to continue capital construction of farmland water conservancy so that they will be able to irrigate during drought and drain during waterlogging, particularly to get rid of waterlogging damage. In this regard, Longping Commune in Guangji County has provided a reliable experience. This commune has largely adopted the digging of deep ditches, the opening of a large port, construction of dikes, and the building of terraced fields within which four ditches have been opened to reduce the underground water, to drain away the ground water and surface water, thereby greatly reducing rot damage and diseases of wheat to transform the "water pocket" and "cereal scab cesspool" low yields situation to a situation of bumper wheat harvests year after year.

Cereal scab, powdery mildew, rust, armyworms, and aphids are the principal wheat diseases in Hubei Province. They develop and spread in varying degrees every year. For the prevention and control of different diseases and insect pest, scientific research and production units have long since had test results in methods of using pesticides, so this is no new technology. The key is changing the past practice in many places of not using pesticides. Production leadership departments have to bolster propaganda and guidance, and supply and marketing departments have to organize supply in a planned way. At the same time it is necessary to do as Guangji County did in the prevention and control of cereal scab of wheat by doing sensible planting, and using superior varieties and pesticides in combination for comprehensive prevention and control.

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LINKING PLANNED OUTPUT TO REMUNERATION EXTOLLED

Wuhan HUBEI RIBAO in Chinese 21 Sep 81 p 1

[Article by Tian Xiangwen [3944 6763 2429]: "New Development of System of Responsibility Linking Calculation of Remuneration to Production in Hubei's Rural Villages; Production Teams That Have Put Into Effect Calculation of Remuneration Linked to Production Total 66.8 Percent; Those Practicing Unified Administration Linking Production to Workers Total 36.9 Percent]

[Text] The system of responsibility linking calculation of remuneration to agricultural production in Hubei Province has been steadily consolidated, prefected, and has seen very great development during the past year.

Ever since the transmission to lower levels of the Central Committee documents on strengthening and perfecting the system of responsibility for production, all echelons of CCP committees in the rural villages of Hubei Province have enhanced leadership and have diligently cleared away "leftist" ideological influences, handling matters in accordance with laws that require that production relationships meet requirements for development of productivity so that various kinds of a system of responsibility linking calculation of remuneration to output develop from application to industrial sideline occupations to agricultural production, develop from application to non-staple crops to staple crops, develop from application to drylands to wetlands, and develop from contracts for 1 year to several years guaranteed without change. As compared with the end of last year, systems of responsibility unlinked to output throughout the province have been on the decline. They declined from 71 percent to 33 percent of the total number of production teams. Systems of responsibility linked to production increased, going from 29 percent to 116.8 percent of all production teams. Within the various systems of responsibility linked to production, implementation of specialized contracting and linking of output to workers or to households has steadily increased, while those linking production to teams have decreased. Increasing fairly rapidly has been unified administration with output linked to workers. Production teams putting into effect this kind of a system of responsibility rose from 5.6 percent of the total number of production teams in 1980 to 36.9 percent. Meanwhile the form of a system of responsibility whereby contracting for work or contracting for production is done with individual households has also developed in some places, with large scale contracting for work employing "several uniformities" has been most common.

Systems of responsibility linkined to output effectively make the most of the superiority of the collective economy and fully arouse the initiative of individual commune members. They promote development of production, lower production costs, increase the quantity of goods, and improve the peasants' livelihood. Some units with a fairly good economic foundation have moved production upward by yet another notch, and some long enduring "three dependency production teams" have freed themselves in a year's time. When grassroots level cadres in Jianning County summarized changes since the institution of the system of responsibility linked to production, each of them was visibly pleased. They said that now rural villages have eight things: granaries have grain; pots have rice in them; jars have oil in them; coops have chickens in them; pens have pigs in them; ponds have fish in them; private plots have vegetables in them; and purses have money in them. A look at the ground, and one sees that both agriculture and sideline occupations are moving ahead together, and there are bumper harvests in grain. A look at people's faces, and one sees they are glowing with health and wreathed in smiles; a look at the markets and one sees prosperity, both buying and selling booming.

Right now all echelons of leadership are in process of summarizing the systems of responsibility for agricultural production, deciding the form of future systems of responsibility for production, and spurring on present field care and autumn sowing and production in order to realize increased output and increased earnings from agriculture this year, and to win an even greater bumper harvest in agricultural production next year.

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CSO: 4007/44

BRIEFS

CATTLE BREEDING DIRECTIVE--The Hubei Provincial People's Government recently published a directive urging all areas in the province to develop cattle breeding. The directive demanded that all areas strengthen the implementation of the production responsibility system of fodder management and encourage the commune members and staff and workers to develop domestic cattle breeding. It is necessary to make full use of grassland and pastures and build strong animal husbandry teams. It is necessary to ensure procurement of cattle and beef at reasonable prices. [HK160859 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 29 Sep 81]

CSO: 4007/64

BRIEFS

COMMODITY GRAIN BASES--According to information provided by the Hunan Provincial Agricultural Bureau, the Dongting Lake District has been developed greatly by the party and the government since liberation and consists of 17 counties and municipalities with a total arable area of 12.7 million mu. Drainage has been improved and river embankments have been reinforced; some 6,100 kilometers of high voltage cables have been installed and 90 power stations have been built. At present, the installed capacity of the power stations in the district totals 360,000 kilowatts. Electricity supply is now available in over 95 percent of the communes and 50 percent of the brigades, and most of the communes and brigades have put scientific farming into practice. The total agricultural output in 1980 increased by over 500 percent compared with 1950, and 1,712 billion jin of commodity grain was turned over to the state in 1980, accounting for 22.6 percent of the total amounts of commodity grain submitted. [HK160933 Changsha Hunan Provincial Service in Mandarin 1100 GMT 27 Sep 81]

LUMBERING CIRCULAR--In view of the severe situation of indiscriminate lumbering in Hunan Province, the Hunan Provincial CCP Committee and Provincial People's Government recently issued an urgent circular urging all areas to adopt measures to curb indiscriminate lumbering. The circular pointed out: indiscriminate lumbering hampers the fulfillment of the state's timber production quotas, hinders the building of the four modernizations and affects the ecological balance. Party committees and governments at all levels must change the state of being lax and weak, they must strengthen leadership and enhance the people's understanding of the significance of protecting the forests. They must also take effective measures to curb indiscriminate lumbering. [HK160859 Changsha Hunan Provincial Service in Mandarin 2300 GMT 28 Sep 81]

CSO: 4007/64

JIANGSU

ANNUAL FRESHWATER FISH OUTPUT OF MAJOR PRODUCING COUNTIES GIVEN

Nanjing XINHUA RIBAO in Chinese 25 Sep 81 p 2

[Article: "Eight Counties in Jiangsu Province Have Annual Freshwater Fish Outputs of More Than 5,000 Tons"]

[Text] Throughout the country, 27 counties and municipalities have annual outputs of more than 5,000 tons. In Jiangsu Province, the eight counties are: Wuxian, Hongze, Xinghua, Wujiang, Gaoyou, Wuxi, Wujin, and Kunshan, of which Wuxian and Hongze have annual outputs of more than 10,000 tons.

Recent survey statistics from the State Aquatic Products Bureau show that the number of counties and municipalities in which annual output of freshwater fish will exceed 5,000 tons will increase from last year's 27 to around 35.

On the basis of State Aquatic Products Bureau requirements, counties with a freshwater fish output of more than 3,000 tons are fishing industry key counties. Last year such counties and municipalities numbered nearly 80. Of this number, those exceeding 5,000 tons included 27 counties and municipalities located in seven provinces, namely Wuxian, Hongze, Xinghua, Wujiang, Gaoyou, Wuxi, Wujin, and Kunshan in Jiangsu Province; Hengyang, Qidong, Yuanjiang, Shaodong, Qiyang, and Hengnan in Hunan Province; Shunde, Nanhai, Zhongshan, Dongguan, and Xinhui in Guangdong Province; Hongshan District in Wuhan City, Honghu, Xishui, and Yangxin in Hubei Province; Huzhou City and Yuhang in Zhejiang Province; Boyang in Jiangxi Province; and Weishan in Shandong Province. In Wuxian, Hongze, Weishan, Huzhou, and Hongshan District in Wuhan City, annual freshwater fish output exceeded 10,000 tons. In Nanhai, Zhongshan, and Shunde counties, annual output was more than 20,000 tons.

Water surfaces for the raising of freshwater fish in these 27 counties and municipalities total 2.65 million mu, which is 6 percent of the total freshwater fish raising area in the country. Freshwater fish output totaled 278,800 tons, which was 22.5 percent of last year's total national freshwater fish output. Common characteristics of these counties and municipalities are as follows: possession of a fairly large amount of water surfaces; considerable attention to the fishing industry on the part of their leaders; organizations and personnel specialized in management of the fishing industry; consistent administrative authority over water surfaces; further implementation of a system of responsibility for fishery industry production; gradual development of scientific fish raising; and fairly abundant mass experience in production. Except for individual counties where output has dropped slightly as a result of disasters, an overwhelming majority of the fishing industries in these 27 counties and municipalities increased output in varying degrees this year, the extent of increased output ranging from 3 to 10 percent.

The State Aquatic Products Bureau believes that there are more counties where water surface resources are abundant and where the potential for development is very great. If leaders will only give serious attention, diligently carry into effect pertinent programs and policies of the party, and adopt effective measures, with effort, output from China's freshwater fishing industry is entirely capable of attaining new levels within a fairly short period of time.

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BRIEFS

GANYU COUNTY PEANUT HARVEST--Ganyu County in Jiangsu has reaped a bumper harvest of peanuts on its 180,000 mu of land with total output exceeding 65 million jin. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 30 Oct 81 OW]

SIHONG COUNTY GRAIN OUTPUT--Sihong County, Jiangsu Province has reaped a bumper harvest of grain and peanuts this year. The total grain output reaches 630 million jin, an increase of 130 million jin over 1980. The total output of peanuts reaches 80 million jin, increasing by 70 million jin over 1980. The total amount of grains and peanuts turned over to the state reaches some 140 million jin, and the average per capita income is expected to reach over 100 yuan, an increase of some 60 yuan over 1980. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 26 Oct 81 OW]

CSO: 4007/64

BRIEFS

OIL PROCUREMENT--Boyang, Gaoan, Duchang, Dongxiang, Yongxiu, Xinyu, Yichun, Jiujiang, Fengcheng and Ruichang Counties in Jiangxi Province have procured some 17 million jin of oil and fat as of 20 October with more than 1 million jin of oil and fat procured in each county. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 30 Oct 81 OW]

CSO: 4007/64

INFORMATION FOR FALL HARVESTING, SOWING GIVEN

Xi'an SHAANXI RIBAO in Chinese 19 Sep 81 p 1

[Article by Research Institute, Provincial Academy of Agricultural Sciences: "Use Every Possible Means to promote Early Ripening of Fall Crop, and Adapt General Methods to Local Situations to Take In Hand Fall Sowing; Scientists and Technicians of the Provincial Academy of Agricultural and Forest Sciences Informally Discuss Problems in Autumn Harvesting and Sowing"]

[Text] On 9 September, the Provincial Academy of Agricultural and Forest Sciences convened a seminar of scientists and technicians to discuss how to triumph over the overcast and rainy weather, and take care of the autumn fields to promote early ripening, reduce losses, and do a good job of fall sowing. They made the following suggestions.

Spring corn. The kernels of the early corn crop (in fields interplanted with rape and wheat), and of the seed corn, are now entering the waxy ripening stage. It is necessary to win out over overcast and rainy days and take advantage of fine days to harvest and dry it so as to prevent mildewing and rotting, to guarantee the harvest and seeds for next year's use.

The corn that was planted following the wheat harvest in mid-June has now come into milk. In order to improve ventilation and penetration of light, change the growing environment, and promote development, the following measures should be taken by adapting general methods to local situations to promote early ripening: 1) Removal of suckers. Pulling up the corn plants that have not formed sturdy stalks for green feeding of livestock. Removing old leaves. Taking off the old, yellow, and dry leaves beneath the ears. 3) Stripping off the husk during the wax ripening stage. When the kernels harden, the outer husk should be stripped from the ears so that they get sunlight and dissipate moisture. 4) Topping. After the wax ripening stage when the husks have turned yellow, cut off the tops of the stalks at the second leaf up from the ear and use it for green feed, thereby increasing sunning time to promote dissipation of moisture.

With regard to the late corn crop of medium and late maturing varieties like Zhongdan No 2 and Huangbaidanjiao, which were sown late or planted late, in fields where pollinization and fruiting has not yet occurred owing to rainy weather, or where there is no hope of ripening taking place, the stalks may be cut for use as ensilage or used as green feed in order to get an early start on turning under the soil, applying fertilizer, and making the fields ready for on-time planting of wheat or use as seedling beds for rape.

Take firmly in hand cottonfield management. Right now the important things to do in cotton field management are to prevent and control insect pests, to prune the plants, to reduce humidity and increase warmth, and to rush harvest overripe bolls, drying them promptly. Overcast and rainy days have been numerous this year, causing serious damage from Anomis flava Fabr, and in some cotton fields the top leaves have been virtually eaten bare. Once the weather clears, 200 to 250 parts of 223 emulsion or 250 to 300 parts of equal parts of wettable 6 percent 666 and 223 emulsion may be sprayed for treatment. Recently Boshi Commune in Dali County had very good results from the use of dichlorvous mixed into soil (2 liang of dichlorvous plus a small amount of water sprayed on 50 jin of dry pulverized soil) and evenly spread for prevention and control. All places can promote this. Survey shows that in most cottonfields at the present time, each cotton plant has ab about three overripe bolls, and in serious cases four or five and more. Once the weather clears a little, a combination of exposing the plants to light and facilitating aeration by pushing two adjacent rows toward each other for a few days and then away from each other for a few days, and picking of moldy bolls and drying them promptly may be used to decrease losses. Old leaves should be removed and empty stems cut off to promote ventilation and penetration of light, to reduce humidity and increase warmth in order to promote early ripening. If rainy and overcast weather continues following ripening of the cotton, heating kangs and drying rooms should be readied for drying and toasting. Management of the kangs and drying rooms should be the responsibility of designated people, and strict precautions taken to prevent fires.

Intensification of care of autumn vegetables such as radishes and Chinese cabbage, expansion of the planting of overwintering vegetables, and increased plantings of quick-growing vegetables.

Quick action to sow dryland rape, and to expand the transplanting area in irrigated places. The overcast and rainy weather has already delayed by 10 days to half a month the sowing of dryland rape. Strict attention should be given quick sowing, using varieties such as Shangdang rape to replace Guanyou system varieties. In planting, plow a furrow in a hard stubble field and dribble the seeds into it. Width of rows should be 3-4 cun, and rows should be 1.2 chi apart. Apply seed fertilizer and increase density of seedlings retained. Increasing density of retained seedlings of dryland rape can effectively control virus diseases of rape, favoring increased yields.

Adapt general methods to local situations in planting sufficient wheat well. According to a farmer's saying, "When wheat is planted in the mud, there will be steamed bread to eat in the coming year." This as well as analysis of numerous years of meteorological data shows that in years when rainfall is more than 200 millimeters before the wheat is planted, the wheat crop the following year will be bumper. This year has brought a lot of rain and soil moisture is ample, providing adequate moisture conditions for the growth of wheat. Therefore, every effort should be made to increase the area sown to wheat. Because wheat requires "wealth while developing," and since autumn downpours may result in organic fertilizer not getting into plants, or deeply plowed rows having large mud clumps, a single application of nitrogenous fertilizer prior to sowing should be promoted as a method to be used. Experiments conducted for many years at many sites by the Provincial Mud Fertilizer Institute as well as large areas demonstrations have shown that in wetlands and drylands alike, this method of fertilization saves labor, reduces fertilizer waste, and increases yields as compared with the method of periodic fertilization. Single deep fertilization with ammonium carbonate and urea increased wheat yields by from 20 to 30 percent as compared with several topdressings of fertilizer during the development period. This year when overcast and rainy weather has delayed the sowing season, should it not be possible to apply organic fertilizer, the deep application method in advance of sowing is even more essential.

In order that wheat can be grown during the high yield period, the wetland late corn crop can be harvested ahead of time during the final part of the waxy ripe stage, the stalks and roots removed, and the soil turned under. Since there has been a lot of rain and soil moisture is plentiful, there is no need to stress deep plowing. The best method is to use a rotary tiller to prepare the land to reduce the number of mud lumps formed and pulverize the soil plots. Depending on the situation, in planting seeds either a drill may be used to form a furrow into which the seeds are dribbled, or a furrow may be made with a hoe. At the same time, an application of seed fertilizer should be made to intensify care prior to overwintering.

9432
CSO: 4007/45

ALL-TIME HIGH OUTPUT OF TEA REPORTED

Kunming YUNNAN RIBAO in Chinese 12 Sep 81 p 1

[Article by Su Fanghua [5685 5364 5478]: "Summer Tea Procurement Throughout the Province Reaches an All-Time High"]

[Text] Following continued increase in spring tea output, a bumper tea yields has been harvested for the summer in Yunnan Province. As of 20 August, a total of somewhat more than 268,000 dan of unfired tea leaf had been purchased by the state in fulfillment of 82 percent of annual plan, a 7.5 percent increase over the same period last year. Of the total, the quantity of summer tea purchased was somewhat more than 140,000 dan, summer tea surpassing the quantity of spring tea and setting an all-time high. Of the provinces 23 major tea producing counties, Lancang County has exceeded quota by 5.8 percent 4 1/2 months ahead of schedule to fulfill annual plan for purchase of 5,000 dan of tea. The five counties of Fengqing, Yunxian, Yongde, Shuangjiang, and Changning have already fulfilled more than 90 percent of annual plan. Quality of unfired tea leaf purchased has also been greatly improved over the same period last year. In Lincang Prefecture, which produces mostly black tea, the average price for each dan of unfired red tea leaf increased 16.94 yuan over the same period last year. In Jinggu County, which mostly produces green teas, the average price per dan of unfired green tea increased 24.74 yuan over the same period last year.

Currently the major tea producing areas are enhancing management of tea plantations, hastening improvements in low yield tea plantations, and devoting themselves to collection and processing of the autumn tea, striving to win an even greater tea harvest for the entire year.

9432
CSO: 4007/40

BRIEFS

GRAIN PURCHASE MEETING--Yunnan Province recently held a provincial meeting of directors of grain departments to seriously study and discuss the notice of the Provincial CCP committee and the Provincial People's Government that the policy for grain purchase will remain unchanged for another 5 years. The meeting held: the Provincial CCP committee and People's Government are correct in publishing this notice. The unchanged grain purchase policy will definitely encourage the masses and arouse their enthusiasm in increasing grain production. The grain departments must seriously implement the spirit of the notice and strive to do a good job of grain procurement. In conclusion, the participants put forth three measures to implement the notice: 1) organize groups to go to the rural areas to popularize the notice and the policy and to arouse the enthusiasm of the cadres and masses to implement the notice; 2) practically implement the procurement quotas which will remain unchanged for another 5 years; 3) actively launch purchase at negotiated prices. Grain departments must overcome difficulties and strive to procure the surplus grain offered by the masses. [HK160949 Kunming Yunnan Provincial Service in Mandarin 1100 GMT 28 Sep 81]

CSO: 4007/64

QUESTIONS ON RURAL ECONOMIC PRACTICES CLARIFIED

Hangzhou ZHEJIANG RIBAO in Chinese 15 Sep 81 p 2

[Article: "Answers to Rural Economic Policy Questions"]

[Text] Editor's Note: We have received quite a few letters from readers asking what are specialized households and specialized people, what are "privately employed persons" and focal point households; what are "excelling households," and what is the contract system? We have turned to a Ningbo Prefecture farm committee comrade to answer these questions as follows.

Question: What is a specialized household and a specialized person?

Answer: Specialized households and specialized persons are a form of the "four specialties" system of responsibility. In their development of farming, forestry, animal husbandry, sideline occupations, and fisheries, production brigades and production teams have contracted with households having the expertise or with individuals production categories suited to specialized performance by individuals, things such as small quantities of economic crops that are fairly technical in nature, livestock feeding industry, and certain handicrafts. Contracts termed "special, fixed, or reward" are signed by the collective with households or individuals. By specialized contracts is meant that the contractors are to be responsible for undertaking certain production work. By fixed contract is meant fixed output, output value, cost, and workpoints (some provide only for fixed profits to be surrendered to higher authority). By reward contract is meant that excess output (or value) merits reward, and owing of output (or value) entails proportional payment of penalties.

Use of specialized households and specialized individuals is helpful in making full use of workforce resources and natural resources. It helps raise levels of science and technology and the degree of specialization. It helps development of diversification, opening new avenues for rural villages to become prosperous in the shortest possible time, and should thus be actively advocated.

Question: What is meant by "privately employed persons" and focal point households?

Answer: "Privately employed persons" are those who, following approval, devote themselves entirely to family sideline occupations. This is a method that has been put forward in view of the large workforce relative to available land, which characterizes rural villages, and that makes the most of workforce advantages to advance commune member household sideline industries. Notices from the CCP Central

Committee and the State Council have clearly pointed out that except for the busy seasons in farming, some of the underemployed and as much auxiliary labor as possible should be permitted to not engage in collective labor so as to be able to devote themselves wholeheartedly to household sideline occupations. Nowadays in commune members households in quite a few communes and brigades, some commune members are no longer engaging in collective productive labor following approval by their production teams. Instead, they are devoting themselves to running private plots and household sideline occupations such as raising hogs, chickens, ducks, rabbits, and fish, and to planting flowers and trees with very good results.

Focal point households is a term that has derived from comparison with "privately employed persons," and involves selection, following production team approval, of commune members possessing certain skills to have their households run certain family sideline occupations. The stste and the collective provide all necessary assistance in seeds or animals, livestock feed, capital, and materials, and link the relationship of the state, the collective, and the individual through a contract. Focal point households are required to participate in collective labor, except for those engaged in certain family sideline occupations. Depending on the actual situation of a production team, both "privately employed people" and focal point households may be assigned a share of responsibility for expenses of public welfare undertakings in accordance with the labor base, or they may have only small responsibility or no tesponsibility.

Question: What is an "excellent household?"

Answer: Co-mune members whose income derived from their own labor is conspicuously higher than local average income levels, and who have relied on their own strenuous work to become prosperous are called excelling households. Earnings from work are of two kinds. One is income derived from participation in collective labor. The other is income derived from developing household sideline occupations. This is fundamentally different from those who engage in speculation and opportunism, and [illegible] exploit others and transgress the welfare of the collective to gain illegal income and become wealthy. Illegal income gained from speculation and opportunism and the exploitation of others must be handled in accordance with law. Excelling households who rely on labor to become prosperous, not only cannot be looked down upon, but should be actively encouraged and supported and enjoy the protection of the law.

Question: What is the contract system?

Answer: The contract system is a kind of economic agreement, and a good method whereby economic methods are used to manage the economy. In the process of establishing systems of responsibility for production in agriculture, it is the "bond" that correctly takes care of and solves relationships among the state, the collective and individuals. No matter the form of the system of responsibility linked to production that is established, production brigades and production teams must sign contracts individually with each contracting unit, laborer, or household in order to assure that the system of responsibility linked to production in agriculture, forestry, animal husbandry, sideline occupations fisheries, industry, or commerce will be implemented and honored. Each contract usually has mutually agreed upon clauses pertaining to the means of production to be supplied to the contracting units and contractors for their use, the output, output value, quality, time of completion (including timely surrender to brigades or communes of product earnings) expenditures, remuneration for labor (workpoints), method of providing rewards, and other necessary provisions contracted for. Following full discussion and approval by commune members, the contract is approved by both parties and a guardian unit, each of which signs it and affixes a seal. Three copies are made of each contract, each party keeping one. Once a contract has been signed, it must positively be carried out. It may not be changed at will without the agreement of all three parties. Violation of the contract resulting in losses will entail economic responsibilities.

9432
CSO: 4007/40

II. PUBLICATIONS

BRIEFS

RURAL YEARBOOK--Beijing, 31 Oct (XINHUA)--A new book for rural readers, the 1982 "Rural Yearbook." Will soon be published by the People's Publishing House. Like "East Is Red," published previously by the same publishing house, the yearbook will contain materials on politics, economics, science, public health, literature and art, culture as well as peasants' everyday life. In addition, it will have several new sections such as "Rural Work Study," "Rural Youth" and "Eugenics and Good Education." A lunar calendar will also be included in the book. [Beijing XINHUA Domestic Service in Chinese 0039 GMT 31 Oct 81 OW]

CSO: 4007/64

Agricultural Resources

AUTHOR: WANG Yixian [3769 2034 6343]
ZHAO Mingcha [6392 0682 5420]

ORG: Both of Research Institute of Geography, Chinese Academy of Sciences

TITLE: "Spatial Distribution Characteristics of Total Radiation in a Ten-day Interval and Photosynthesis Potential in China"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 32-41

ABSTRACT: Many scientists have studied the subject of total solar radiation distribution in China but their reports are mostly limited to the calculation and distribution characteristic of radiation in a month. These data, therefore, are difficult to satisfy the needs of scientific research and production construction. In agricultural production and experimentation, photoenergy utilization of crops during their period of growth and development and photosynthesis experiments of industrial products, etc. all require total radiation data of ten-day periods or even shorter. This paper discusses the method of computing the total radiation of ten-day periods, the concept and the method of computing photosynthesis potential, the spatial distribution of total radiation in a ten-day period and its relationship to photosynthesis potential, and the tendency of change in time of the total radiation in a ten-day period,and the regionalization theory of photosynthesis potential. Ten-day solar radiation data and the photosynthesis potential of the Northeast, the Inner Mongolia Region, the North China, the Northwest, the Eastern Region, the Region of Sichuan, Yunnan, and Guizhou, and the Qinghai-Xizang Plateau are introduced.

AUTHOR: SU Renqiong [5685 0086 8825]
LU Yazhou [7120 0068 3166]

ORG: Both of Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences

TITLE: "A Preliminary Study on Irrigation and Drainage Measures of Meadow Reclamation in Heilongjiang Province"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 62-69

ABSTRACT: Meadow reclamation discussed in the paper includes the 4 types of lake shores, vicinity of springs, banks of large rivers and streams, and valleys of small streams. Soils of these areas are thick and highly fertile. After reclamation, cultivation, drying, and maturation, the unit yield of these lands is generally 30 percent above slope lands, and doubling in some cases. The fields are flat and the condition of water is good and the only remaining problems are drainage and irrigation. Reasons for water accumulation of these lands and proper drainage measures are discussed. With successful drainage, irrigation during arid periods becomes necessary, of course. The construction of reservoirs and/or wells are discussed and recommended.

AUTHOR: KANG Qingyu [1660 1987 4416]
ZHONG Lieyuan [6945 3525 0337]

ORG: Both of Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences

TITLE: "The Experience and Lesson in Bringing Hulunbeier Grasslands Under Cultivation"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 70-81

ABSTRACT: Hulunbeier grasslands are located in the western border of the Northeast in China, including the 2 parts of the low western foothills of Daxinganling and the Hulunbeier highland. Originally, the Eastern part is a forest meadow-chernozem zone and the Western part is a semi-arid grassland-chestnut soil zone. After 1958, especially in 1960, a large scale agricultural reclamation project was carried out in the forest border of the eastern part and in the vast highlands of the western part. By the end of 1962, 25 state-operated farms encompassing close to 3 million mu had been established and a sharp contradiction between agriculture and grazing occurred. In 1963, 76 percent of the cultivated fields (2.26 million mu) was re-abandoned to grassland. The communes devoted to animal husbandry have no grain and feed bases, however. In 1972, the 4 banners had to buy 90 million jin of grain and the transportation cost alone was 600 thousand yuan. The bitter lesson of history points out clearly that if large scale reclamation and retreat from cultivation are not carefully planned, there will be a penalty according to natural and economic laws. The paper includes recommendations for resolving the problems of the eastern and the western parts of the region respectively.

AUTHOR: LU Zhiguang [4151 1807 0342]
ZHENG Jianfei [6774 0494 7236]

ORG: Both of Beijing University of Agriculture

TITLE: "Estimation of Precipitation Change Since the Large Scale Reclamation and Cultivation on the Sanjiang Plain"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 90-96

ABSTRACT: The vast region of the Sanjiang plain of the Northeast is currently an important base of commercial grains in China. Since the middle 70's, the problem of aridity is becoming more severe every year. To date, about 1/3 of the region is under cultivation. As the marshes are drained and vegetative covers destroyed during reclamation, the area of water surface is reduced to cause the humidity to drop, the temperature differential to enlarge, the wind speed to accelerate, and wind erosion of soil to rise. This paper reports the establishment of a mathematical model for estimating the range of effect of reclamation on precipitation. The results demonstrate that the mean precipitation of Sanjiang plain before reclamation is 589.2 mm/year, and it is 536.9 mm/year after reclamation. Another calculation shows that the precipitation of the cultivated area and that of the uncultivated area of the plain are not obviously different. Analyses of historical data and the background macrometeorology indicate that in Sanjiang plain, the period of the late 70's is determined to be arid by the principle of natural change more than any other factor.

6168
CSO: 4009/46

Animal Husbandry

AUTHOR: ZHOU Shilang [0719 0013 2597]

ORG: Wenjiang School of Agriculture, Sichuan Province

TITLE: "A Study on the Growth and Development of Neijiang Piglets"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 4, 20 Aug 81 pp 6-8

ABSTRACT: For the purpose of promoting reasonable feeding and management of the local superior swine breed of Neijiang pigs of Sichuan Province, the growth and development of 933 piglets (511 males and 422 females) are observed under a low nutritional level of primarily green rough feed, with some processed materials,in a 10.07 : 0.6 kg mixture. From birth to 60 days of age, the piglets are weighed and measured once every 10 days, and dissected to inspect the internal organs. The chemical composition changes of the blood are also analyzed in the laboratory. The resultant data are reported.

6248
CSO: 4009/66

AUTHOR: LI Wei [2621 4850]
WANG Hao [3769 3185]

ORG: Both of Department of Animal Husbandry and Veterinary Medicine, South China College of Agriculture

TITLE: "Report of One Case of Lymphoid Leukosis of a Dairy Cow"

SOURCE: Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] in Chinese No 8, 22 Aug 81 pp 24-25

ABSTRACT: A Holland hybrid cow, aged 3½ years, of a certain dairy farm of a Guangzhou suburb suffered repeatedly from mastitis from 13 Jan 1980. She was cured after repeated treatment but her appetite worsened on 8 March; she grew thinner daily, and produced less milk; she dropped from 30 jin to 2 jin. She died on 27 Mar. Blood analysis showed 2.47 million/mm^3 red cells and 19,000/mm^3 white cells. The number of reports of lymphoid leukosis in dairy cattle is increasing every year and presents a serious threat to the development of the dairy industry and there is the question of the effect of milk products of cows with this disease on human health. Pathological and histological data of the cow and the dead fetus are included in the paper.

6248
CSO: 4009/60

Phytophysiology

AUTHOR: XIAO Jianping [5135 1696 1627]
CAI Jianping [5591 0494 5493]
LI Shujun [2621 3219 0193]

ORG: All of the Laboratory of Photosynthesis, Shanghai Institute of Plant Physiology, Chinese Academy of Sciences

TITLE: "The Presence of Coupling Factor for Photophosphorylation from Plastids of Albino Rice Seedlings"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 209-214

TEXT OF ENGLISH ABSTRACT: It has been known that coupling factors for photophosphorylation (PSP) are already present on the membranes of plastids from etiolated plant, and that CF_1 is formed during the early stages of chloroplast development. Whether there is CF_1 in plastid membranes of albino seedlings also, however, is not known. Therefore, we performed the following experiments with pellets of albino rice seedling extract obtained by centrifugation between 600-1500 x g.
1. When EDTA extracts from plastids of albino rice seedling were subjected to polyacrylamide gel electrophoresis, there was a band at the position of CF_1.
2. It was shown that the plastids preparation from albino rice seedling had membrane-bound ($Mg^{++}-Ca^{++}$)-activated ATPase activity.
3. The plastid membrane from albino rice plants can partially recover the PSP

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 209-214]

activities of deficient membranes of thylakoids of green spinach leaves when they are mixed together.
4. To preclude the presence of mitochondria in the pellets separated between 600-1500 x g, these were examined under electron microscope together with mitochondria preparations separated between 3000-10,000 x g, as is usually done. No mitochondria were present in the former preparations.

These results indicate that the coupling factor for photophosphorylation must be present in the albino rice seedlings and, as the proplastids in albinos are relatively undeveloped, this will lend support to the view that CF_1 is formed at an early stage of chloroplast development.

AUTHOR: LI Cuifang [2621 3546 5364]
GU Jianben [7357 0313 2609]
ZHU Meizhen [2612 5019 3791]
et al.

ORG: All of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences

TITLE: "The Oxygen Inactivation and Protection of *Azotobacter vinelandii* Nitrogenase"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 225-231

TEXT OF ENGLISH ABSTRACT: The content of iron protein, being the more oxygen-sensitive component of nitrogenase, was found to be much lower than the Mo-Fe protein in the extracts prepared from sonicated *Azotobacter vinelandii* cells. The nitrogen-fixing activity of the extracts remained practically unchanged on adding partially purified Mo-Fe protein, while it was increased many times on adding partially purified iron protein.

The nitrogen fixing activity of *A. vinelandii* extracts, as was shown earlier in the literature, might be recovered in pellets obtained by centrifugation. It was discovered that an enhanced activity of the extracts due to added iron protein was

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 225-231]

also obtained under the same treatment and was more oxygen resistant than that of the free iron protein. Thus it seemed probable that the added iron protein might combine with certain constituents of the extracts to form a complex, which could be separated by centrifugation and was more resistant to oxygen.

Mg^{++} was a necessary factor to prevent the nitrogen-fixing activity of the extracts from being inactivated by oxygen. The extracts lost their activity completely as soon as they passed through Sephadex G-25 column in air, but maintained their full activity under the same treatment if 0.01 *M* $MgCl_2$ was included in both the equilibrating and eluting buffers. Addition of a suitable amount of Mg^{++} to the cell suspension before sonication not only enhanced the activity of the extracts obtained, but also made it still more resistant to oxygen inactivation.

AUTHOR: CHENG Shuangqi [4453 7175 1142]
MO Ximu [5459 3356 4476]

ORG: Both of the Department of Biology, South China Teacher's College

TITLE: "Nitrogen Fixation and Hydrogen Evolution by *Anabaena azotica* Ley HB686"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 241-248

TEXT OF ENGLISH ABSTRACT: *Anabaena azotica* Ley HB686, native to China, has been selected for the study of nitrogen fixation and hydrogen evolution. In the present investigation the following phenomena have been observed:

1. Under illumination (20,000 lux) the acetylene reduction and the evolution of hydrogen and oxygen by the filaments of blue-green algae *A. azotica* HB686 increase with time. In darkness the H_2-evolution is much less. It is shown that the H_2-production is light-dependent. Although the production of both C_2H_4 and O_2 is linear, that of O_2 has a higher rate. It is highly probable that the rate of photosynthesis is higher than that of nitrogen fixation. *A. azotica* contains hydrogerase which catalyzes the consumption of H_2. Under illumination at the beginning of two hours, the consumption of H_2 increases with time. Afterward it comes to a smooth plateau. It may be supposed that the H_2 released by nitrogenase combines with the O_2 released from photosystem II. In addition, H_2 consumption by *A. azotica* in darkness is also much lower. This demonstrates that light is necessary for the consumption of H_2.

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 241-248]

2. The characteristics of hydrogen consumption catalyzed by hydrogenase have been studied. Argon has been used as gas phase which contained 4 percent H_2 and various concentrations of O_2. When O_2 concentration is lower than 2 percent, the rate of consumption of H_2 increases with an increase of O_2 concentration, while with 4 percent O_2 the consumption of H_2 does not increase. The Km of hydrogenase for oxygen is 0.5 mM. The concentration of H_2 affects the rate of hydrogen consumption significantly. The Km of hydrogenase for hydrogen is 1.6 mM.
3. The activity of acetylene reduction may be enhanced when the gas phase contains 10 percent H_2. It is probable that the Knallgas reaction can utilize the excess oxygen and thereby keep the nitrogenase under anaerobic conditions and protect the enzyme within the cell.
4. Various concentrations of ammonium ion (from 0.01 mM to 10 mM) inhibit acetylene reduction and H_2-production to various degrees. The acetylene reduction and H_2-production were severely inhibited by 10 mM ammonium.
5. DCMU is an inhibitor of photosystem II. It is well known that DCMU inhibits the O_2 evolution by blue-gree algae. There is much controversy among different authors about the effects of DCMU on H_2-production by blue-gree algae. We observed that the ethylene and hydrogen production was inhibited by about 20 percent by DCMU (2×10^{-5}). Both acetylene reduction and H_2-production were inhibited significantly by DNP, an uncoupler of photophosphorylation, at a concentration of 5×10^{-4} M.

AUTHOR: GUAN Yingqian [7070 4481 6197]
FANG Jianxiong [2455 1696 7160]
ZHANG Yinghuang [1728 2503 3874]
et al.

ORG: All of Shanghai Institute of Plant Physiology, Chinese Academy of Sciences

TITLE: "Effect of Abscissic Acid on the Senescence of Detached Rice Leaves"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 257-263

TEXT OF ENGLISH ABSTRACT: In order to study the senescence of plant organs, detached rice seedling leaves were used as the experimental material. It was found that treatment with ABA accelerated the decline of chlorophyll content and protein degradation, and concurrently enhanced the activities of ribonuclease, cellulase and acid phosphatase, with cellulase activity being enhanced most remarkably, to two to five times that of the control. The rise in cellulase activity increased with increasing ABA concentration. The presence of cellulase has been shown in the abscission zone of the kidney bean and orange (Abeles, 1969, Lewis and Varner, 1970, Durbin, 1980, Huberman, 1975), as well as in the ripening avocado (Awad and Young, 1979, Pesis, 1978), peaches (Hinton and Pressey, 1974) and tomato (Sobotka and Watada, 1971), but has never been demonstrated previously in rice leaf blades.

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 257-263]

It is considered that the enhancement of the activity of these hydrolytic enzymes by ABA promotes the disintegration of cellular inner structure, thus speeding up the senescence.

AUTHOR: LI Shuxuan [2621 2562 6513]

ORG: Department of Horticulture, Zhejiang Agricultural University

TITLE: "Effects of Ethrel and Gibberellic Acid on the Sex Expression of *Lagenaria leucantha* Rusby"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 265-273

TEXT OF ENGLISH ABSTRACT: The sex expression of Chinese white-flowered gourd, *Lagenaria leucantha* Rusby, cv. "Hangzhou long gourd," can be effectively controlled by foliar spray with ethrel and gibberellic acid.

As a result of the treatment with ethrel at the 4 to 6 leaf stage, pistillate flowers were produced continuously from the 11th or 12th nodes to higher than the 20th nodes along the main shoot, no matter whether long-, short- or natural day length conditions were used. The earlier the application to the plant, the more pistillage flowers would be produced. As for the case of the side branches, however, no appreciable difference was found in the sex expression between the ethrel-treated and the control plants, while on those treated with gibberellic acid more staminate flowers were produced, especially on those under long photoperiod conditions.

When ethrel was applied in combination with gibberellic acid, the effect of ethrel in sti

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 265-273]

in stimulating femaleness was suppressed by high concentration and not by low concentration of GA_3.

It was found that not all the staminate flower buds could be changed to pistillate flowers. Only the flower buds with anthers shorter than 0.2 to 0.4 mm in length could be changed to pistillate flowers, while those with anthers longer than 0.5 mm could not be changed and were little affected by ethrel treatment. Application of ethrel did not directly induce the production of an additional pistillate flower, but did just shift the sex expression from male to female.

AUTHOR: HUANG Xianghui [7806 4382 6540]
ZHOU Ping [0719 5393]
YAN Jiqiong [7346 1323 8825]

ORG: All of the Department of Biology, East China Normal University, Shanghai

TITLE: "The Effects of Some Growth Substances on the Cell Wall Regeneration in the Tobacco Mesophyll Protoplasts"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 275-280

TEXT OF ENGLISH ABSTRACT: The tobacco mesophyll protoplasts are released by EA_3-867 cellulase and cultivated in NT medium (Nagata and Takebe, 1971) with thin layer liquid method. Different growth substances are added individually into the basal medium. Afterwards, Calcofluor white VBL is used to examine their effects on the formation of the cell wall. The results are as follows:

1. Kinetin is essential for the regeneration of the cell wall and 0.25 mg l^{-1} is adequate and suitable.
2. 2, 4-D has no effect on the regeneration of the cell wall, but its absence decreases the viability of the cell. The optimal concentration is about 2 mg l^{-1}.
3. A concentration of coumarin higher than 200 mg l^{-1} will depress the regeneration of the cell wall, and also inhibit the growth of the cell.

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4. A concentration of triiodobenzoic acid higher than 20 mg l^{-1} will depress the regeneration of the cell wall, and also inhibit the growth of the cell.
5. ABA does not inhibit the regeneration of the cell wall, but promotes the budding of the cell.
6. GA_3 at 50 mg l^{-1} does not affect the regeneration of the cell wall, but promotes the growth of the cell; at 100 mg l^{-1} it will inhibit the regeneration of the cell wall and the growth of the cell.

The effects of these growth substances on the regeneration of the cell wall are discussed.

9717
CSO: 4009/53

AUTHOR: WEN Xizhe [2429 1585 0772]
XIANG Dashi [7309 1129 1395]

ORG: WEN of the Control Institute of Veterinary Bioproducts and Pharmaceuticals, Ministry of Agriculture; XIANG of the Veterinary Service of Beijing

TITLE: "Studies on Enterotoxemia in Piglets. III. An Improved Vaccine and Its Application"

SOURCE: Tianjin XUMU SHOUYI XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA] in Chinese No 3, 1981 pp 163-168

TEXT OF ENGLISH ABSTRACT: 1. It was reported from a few pig farms in the spring of 1976 that the immunity conferred by the original enterotoxemia vaccine was not as good as expected. After investigating this condition, we suggested that it might be due to the low level of doses used or an insufficient antigen content in the vaccine.

2. To improve the quality of this vaccine a concentrated aluminum hydroxide vaccine was produced with a mixed culture of two different strains of Clostridium perfringens type C, one of which was isolated from a piglet which had died of enterotoxemia and the other from a sheep which had died of "struck."

3. Based on experiments with this improved vaccine, we recommended using two injections, 5-10 ml each, to immunize the pregnant sows which had not been injected

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with this vaccine before, and one injection, 3-5 ml per dose, for pregnant sows which had been given this vaccine.

4. On some pig farms where piglet enterotoxemia had been prevalent previously, the disease was prevented by using the improved vaccine.

AUTHOR: XU Zhenying [6079 2182 5391]
CHEN Runsheng [7115 3387 3932]
WANG Xingshan [3769 1840 0810]
WANG Jiaxie [3076 0857 3610]

ORG: XU and CHEN both of Beijing Agricultural College; WANG Xingshan and WANG Jiaxie both of the Scientific Research Office, Hongxinglong Farm Bureau

TITLE: "Genetic and Heterotic Behavior of Carcass Qualities and Visceral Characteristics of the Northeastern Indigenous and Landrace Breeds of Swine and Their Crosses. II. Genetic and Heterotic Behavior"

SOURCE: Tianjin XUMU SHOUYI XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA] in Chinese No 3, 1981 pp 199-206

TEXT OF ENGLISH ABSTRACT: Concomitant with studies on the carcass and visceral traits of the northeastern indigenous (M) and Landrace (L) pigs, parallel observations were made on their reciprocal F_1 crosses (L.M and M.L) and Landrace backcross progenies from reciprocal F_1 gilts, with the objective of elucidating the hereditary and heterotic patterns of these traits. Results indicated that traits signifying adiposity, such as backfat thickness, relative weights of perirenal fat, peripheral fat and total fat, were dominant or over-dominant characteristics. Crossbred progenies exhibited highly significant heterosis, in contrast to the current hypothesis that carcass traits of swine are of the intermediate inheritance

[Continuation of XUMU SHOUYI XUEBAO No 3, 1981 pp 199-206]

category and that crossbreeding will not bring about hybric vigor. This provides us with a new scientific resource for further exploitation of heterosis in addition to its application in reproductive and growth traits in order to satisfy our increasing fat demand.

Body length, rib number and skin thickness behaved as intermediate inheritance. Loin-eye area, percentage of ham cut, relative weights of skin and bone were also intermediate in inheritance, with an inclination toward the low-order parentage. Dressing percentage, number of thoracic vertebrae, relative weights of forequarter and loin cuts and of mesentary fat likewise behaved intermediately, although with occasional inclination toward the high-order parentage. Relative weight of lean cut, being highly correlated negatively with fatty tissue, also demonstrated strong dominance, approaching the low-order indigenous stock. All visceral traits exhibited intermediate inheritance without heterosis.

Mechanisms concerning the genetics and heterosis of traits, such as perirenal fat and others, were discussed with caution.

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Veterinary Research

AUTHOR: SHI Yongyu [1597 3057 3768]
HUANG Meiqun [7806 5019 5028]
GE Wennan [5514 2429 2809]
CHENG Xiao [4453 2556]
YANG Xueli [2799 1331 4409]

ORG: All of Lanzhou Research Institute of Veterinary Medicine, Chinese Academy of Agricultural Sciences

TITLE: "Research on Chlamydialic Miscarriage in Sheep--Pathogenic Isolation and Identification"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 8, 20 Aug 81 pp 1-5

ABSTRACT: In recent years, spontaneous abortions have occurred in some major sheep and goat areas, farms in Gansu, Qinghai, Nei Menggu, and Xizang. Very low rate of such common bacillus as Brucella and Salmonella could be found and a survey study also excluded nutrition as the direct cause. In 1973, the Nei Menggu Research Institute of Animal Husbandry and Veterinary Medicine reported the observation of Chlamydiales virus from the smears of goats that had miscarried. For the purpose of further clarifying the condition, in 1978-80, 108 aborted fetuses were gathered from sheep and goat farms of Gansu, Qinghai, Nei Menggu, Xizang, etc. for artifi-

[continuation of SHOUYI KEJI ZAZHI No 8, 81 pp 1-5]

cial infection, pathogen isolation, Chlamydiales identification, etc. Three suspected strains of Chlamydiales, A_1, A_{26}, A_{34}, antigens and immune sera were thus established. The complement fixation reaction method, using the preliminarily made antigens, was employed to examine 176 serum specimens of ewes of Dulan of Qinghai and 11 specimens of Tianzhou of Gansu. Assuming a result of 1 : 16 or above to be positive, of these specimens, 47 of those of Dulan and 4 of those of Tianzhou were identified as positive, at a rate of 26.7 and 34.4 percent respectively.

AUTHOR: HE Mingqing [0149 2494 3237]
LIU Kelin [0491 0344 3829]
WANG Dezhong [3769 1795 4191]
HU Huimin [5170 1920 3046]
XIAO Guohai [5135 0948 3189]
YANG Peimei [2799 0012 3774]
ZHANG Mingchang [1728 2494 1603]
PAN Chuanfu [3382 0278 4395]
ZHANG Mingfu [1728 2494 4395]
ZHU Yulan [2612 3768 5695]
ZHABG Mingwei [1728 2494 0251]

ORG: HE, LIU, WANG, HU, XIAO of Department of Animal Husbandry and Veterinary Medicine, Sichuan College of Agriculture; YANG of Veterinary Medicine Diagnostic Office, Wenjiang District Bureau of Agriculture; ZHANG, PAN of Neijing District Pig Breeding Farm; ZHANG of Leshan District Pig Breeding Farm; ZHU, ZHANG of Wenjiang District Food Company

TITLE: "Report of Piglet Yellow Dysentery Prevention and Treatment Experiment"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 8, 20 Aug 81 pp 5-9

ABSTRACT: Piglet yellow dysentery is an acute infectious disease of newborn piglets caused by certain serotypes of pathogenetic Escherchieae. Large quantities of

[continuation of SHOUYI KEJI ZAZHI No 8, 81 pp 5-9]

research studies in England, the USA, etc. have produced some live or inactivated vaccines for oral administration or injection of pregnant sows to prevent this disease in the piglets to be born. Effects of the vaccines are not uniformly reported, however. According to the English scientist, Nagy, who visited China in 1980, the purified K_{88} antigen immunization of sows produced 70 percent rate of protection of the piglets in England, and 30 percent in the USA. The difference is perhaps, he claimed, related to the complex types of Escherchieae in various countries. Chinese scientists FANG Dingyi [2455 1353 0001] et al used Escherchia $O_{33}:K_{NM}$ to prepare a biological preventive agent and its effect has been reported to be obvious. In 1978-80, the authors isolated the Chuanya strain, $O_7:K_+$, from healthy piglets to prepare a vaccine, named Chuanya-30, which is an Escherchia that does not produce enterotoxin. The liquid vaccine made from it has been found to be safe and effective when it is fed orally to newborn piglets before breast-feeding. Its effect of preventing yellow dysentery is obvious and there are no adverse side-effects. This liquid vaccine is easy to prepare at a very low cost. Experimental data of Jul-Sep, 79 are reported.
This paper was received for publication on 30 Dec 80.

AUTHOR: WANG Yongkun [3769 3057 0981]
ZHOU Yangsheng [0719 7122 3932]
XU Yuan [1776 3850]
FANG Dingyi [2455 1353 0001]
WANG Shiwu [3769 0013 2976]

ORG: WANG, ZHOU, XU, FANG of Veterinary Microbiology Teaching and Research Group, Jiangsu College of Agriculture; WANG of Suqian County Veterinary Hospital

TITLE: "A Study on the Mild Type Hog Cholera"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 8, 20 Aug 81 pp 22-27

ABSTRACT: In the past decade, epidemics of a swine infectious disease with high fever as the major symptom have been occurring in some regions of Jiangsu Province. In most cases, there are no observable skin lesion, congestion, hemorrhage, etc. symptoms. Incidences, at rates of 15-17 percent, usually occur during the period of Jun through Oct, and the mortality rate varies between 24 and 27 percent. The masses call it nameless fever or white skin disease, as its pathogenesis has been unknown. The authors carried out some diagnostic, prevention, treatment experiments. The results demonstrate that this is a mild form of hog cholera, caused by the swine fever virus. Clinical symptoms of the disease, dissection observations, infection experiments, and immunization experiments are reported.

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